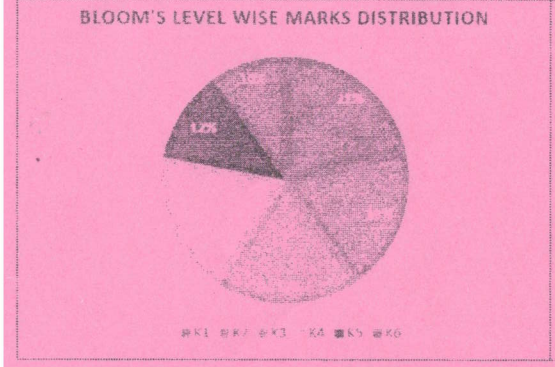
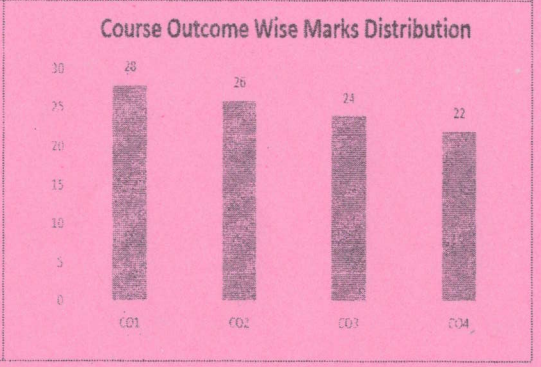
01/05/24 M 70

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Student will be in a position that he/she can design vlsi circuits starting from pmosnmos, cmos, and bicmos technology based design.
	CO2	Gains thorough knowledge on design tools to draw layouts for the transistor structures
	CO3	The student will understand the design of logic gates
	CO4	The student will understand the design of sequential systems

GRAPHICAL REPRESENTATION





ARKA JAIN University Jharkhand — NAAC GRADE A — ACCREDITED UNIVERSITY

END TERM EXAMINATION
School of Engineering & IT

Branch	Computer Science & Engineering	Program	B.Tech
Subject Name	VLSI System Design	Semester	VIII
		Year	April 2024

Time: 3 Hour
Max. Marks : 70

- Start writing from 2nd page onwards; **don't Write on the 1st Page Backside**
- **Answer all Questions of Section A (Compulsory)**
- **Answer Any Four out of Six of Section B**
- **Answer Any Three out of Five of Section C**
- **Possession of Mobile Phones** or any kind of **Written Material, Arguments with the Invigilator or Discussing with Co-Student** will comes under **Unfair Means** and will **Result** in the **Cancellation of the Papers**.

Knowledge Level (KL)			
	K1 : Remembering	**K3** : Applying	**K5** : Evaluating
	K2 : Understanding	**K4** : Analysing	**K6** : Creating

Section A (Each question Carry 02 Marks from Q1-i to Q1-x) – 20 Marks

Q. N 1	QUESTIONS	Marks	Cos	KL	PO
i	What is masking in fabrication?	2	CO1	K2	PO1
ii	What is pass transistor logic?	2	CO3	K1	PO2
iii	What is ion implantation?	2	CO1	K1	PO2
iv	Give the condition at which n-MOS operates in saturation mode.	2	CO1	K3	PO2
V	Explain Moore's law of VLSI microchip.	2	CO4	K1	PO1
vi	Give an expression for power density current after constant field scaling?	2	CO2	K2	PO1
vii	What is the effect of constant voltage scaling on drain current? Give expression.	2	CO2	K3	PO1
viii	Design a CMOS logic for NAND gate.	2	CO3	K4	PO1
ix	Why channel is wider towards source end and narrow towards drain end.	2	CO1	K5	PO2
x	Give the condition at which nMOS operates in linear and saturation mode.	2	CO2	K4	PO1

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 5 Marks)

Q. No.	QUESTIONS	Marks	Cos	KL	PO
2	With a block diagram explain the circuit design procedure.	5	CO1	K2	PO1
3	What is the differen e between enhancement type and depletion type l\ OSFET?	5	CO1	K1	PO2
4	Draw the stick diagram for the expression $\overline{A+B}$. Use of color is mandatory.	5	CO3	K5	PO2
5	Discuss in detail the concept of floor planning and its various constraint.	5	CO4	K3	PO2
6	The simplified CMOS circuit diagram is given below. Find an equivalent equivalent (W/L) ratio for nmos and pmos network, assuming that (W/L)p = 15 for all pMOS transistors and (W/L) = 10 for all nMOS transistors.	5	CO4	K5	PO1
7	Draw a pull up and pull down network. Explain why pMOS is used in pull up and nMOS is used in pull down network. Explain with a truth table.	5	CO3	K4	PO1

Section C (Answer any THREE out of FIVE) – 30 Marks-
(Each question Carry 10 Marks)

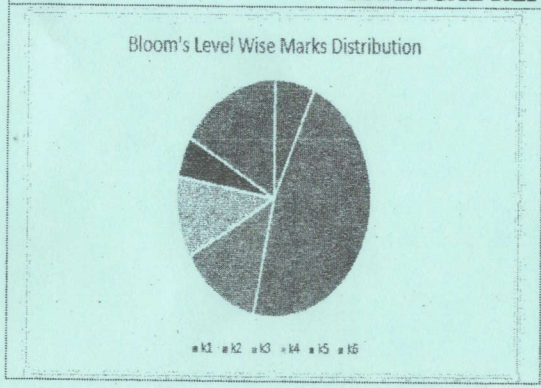
Q. No.	QUESTIONS	Marks	Cos	KL	PO
8	Discuss the fabrication process of CMOS transistor	10	CO1	K1	PO1
9	Design a resistive load inverter and discuss the VTC curve for the same.	10	CO2	K3	PO1
10	Derive an expression for drain current in n-channel MOSFET for linear mode operation	10	CO2	K4	PO2
11	Explain any three of the following: a) Field Programmable Gate Array (FPGA) b) Gate Array Design c) Standard Cell Based Design d) d. Full Custom Design	10	CO4	K2	PO2
12	Design a complementary static CMOS XOR gate at the transistor level. The XOR gate Boolean expression F has four literals and is F= (D + A(B + C))'	10	CO3	K6	PO2

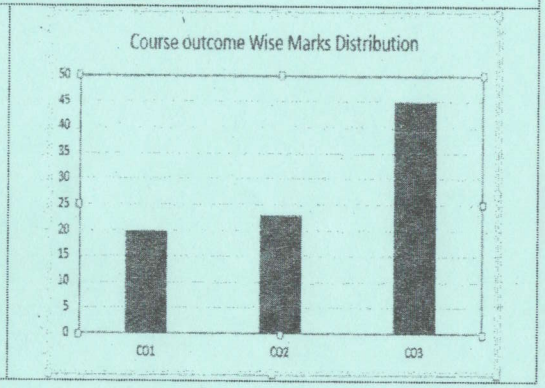
3/05/2024 M 70

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Explain the core concepts of the cloud computing paradigm: how and why this paradigm shift came about, the characteristics, advantages and challenges brought about by the various models and services in cloud computing.
	CO2	Illustrate the fundamental concepts of cloud storage and demonstrate their use in storage systems such as Amazon S3 and HDFS
	CO3	Analyze various cloud programming models and apply them to solve problems on the cloud.

GRAFICAL REPRESENTATION





JGI ARKA JAIN University Jharkhand | NAAC GRADE A ACCREDITED UNIVERSITY

END SEM EXAMINATION
School of Engineering & IT

Branch	Computer Science & Engineering	Program	B.Tech
Subject Name	Cloud Computing	Semester	VIII
		Year	April 2024

Time: 3 Hour
Max. Marks : 70

- Start writing from 2nd page onwards; **don't Write on the 1st Page Backside**
- **Answer all Questions of Section A (Compulsory)**
- **Answer Any Four out of Six of Section B**
- **Answer Any Three out of Five of Section C**
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Knowledge Level (KL)			
	K1 : Remembering	**K3** : Applying	**K5** : Evaluating
	K2 : Understanding	**K4** : Analysing	**K6** : Creating

Section A (Each question Carry 02 Marks from Q1-i to Q1-x) – 20 Marks

Q. N 1	QUESTIONS	Marks	COs	KL
i	What is cloud computing?	2	CO1	K1
ii	Why Load balancing is important?	2	CO1	K2
iii	Define distributed computing.	2	CO3	K2
iv	Differentiate Grid computing and cloud comp.	2	CO1	K1
v	Illustrate the concept of scaling.	2	CO3	K3
vi	Write 5 disadvantages of distributed computing.	2	CO1	K2
vii	Define a three layers of computing.	2	CO3	K1
viii	What do you mean PaaS?	2	CO3	K2
ix	What are the various types of services provided by cloud?	2	CO3	K2
x	What is a mainframe computer?	2	CO3	K2

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Explain in brief SaaS computing stack with diagram.	5	CO2	K3
3	Compose the AWS cloud architecture with proper diagram.	5	CO2	K6
4	Draw the model for distributed computing environment.	5	CO3	K5
5	Design the NIST cloud architecture.	5	CO3	K6
6	Illustrate essential characteristic for NIST cloud architecture.	5	CO3	K3
7	Illustrate Private, Public, Hybrid and Community cloud with example.	5	CO1	K5

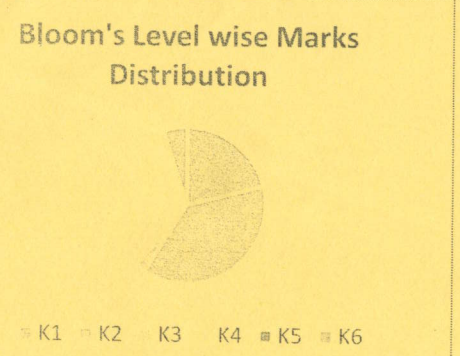
Section C (Answer any THREE out of FIVE) – 30 Marks-
(Each question Carry 10 Marks)

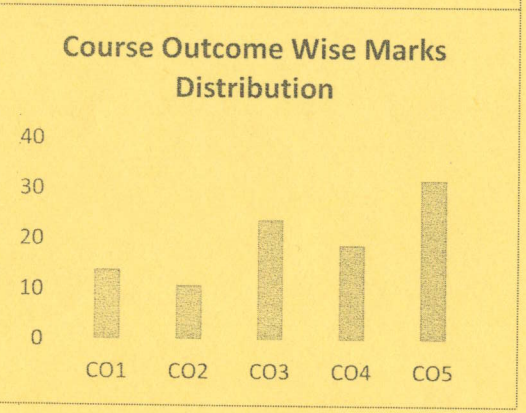
Q. No.	QUESTIONS	Marks	COs	KL
8	Explain 12 essential characteristics of cloud computing.	10	CO1	K2
9	State and explain various actors and their roles in cloud computing with neat diagram.	10	CO2	K2
10	Explain various Cloud service models with proper explanation.	10	CO3	K6
11	Explain the term virtualization with explanation, what are the advantages of virtualization.	10	Co2	K2
12	Write a short note on Salesforce.com explaining the term Elastic cloud.	10	CO3	K4

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Student should demonstrate understanding of design issues of advanced operating systems and compare different types of operating systems.
	CO2	Analyze design aspects and data structures used for different subsystems of Advanced OS.
	CO3	Demonstrate understanding of different architectures used in Distributed OS and analyze their design issues.
	CO4	Demonstrate understanding of different architectures used in Multiprocessor OS and their scheduling algorithms.
	CO5	Classify Real Time OS and analyze various real time scheduling algorithms.

GRAFICAL REPRESENTATION





ARKA JAIN University
Jharkhand

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END SEM EXAMINATION
School of Engineering & IT

Branch	**Computer Science & Engineering**	**Program**	**B. Tech**
Subject Name	**Advance Operating System**	**Semester**	**VIII**
		Year	**April 2024**

Time: 3 Hour
Max. Marks : 70

- Start writing from 2nd page onwards; **don't Write on the 1st Page Backside**
- **Answer all Questions of Section A (Compulsory)**
- **Answer Any Four out of Six of Section B**
- **Answer Any Three out of Five of Section C**
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Knowledge Level (KL)	**K1** : Remembering	**K3** : Applying	**K5** : Evaluating
	K2 : Understanding	**K4** : Analysing	**K6** : Creating

Section A (Each question Carry 02 Marks from Q1-i to Q1-x) – 20 Marks

Q. N 1	QUESTIONS	Marks	COs	KL
i	Mention the types of Advanced Operating System.	2	CO1	K1
ii	What do you mean by Remote Procedure Call?	2	CO4	K2
iii	Explain the Meaning of Fault Tolerance with respect to operating system.	2	CO2	K4
iv	How is memory managed in real time and mobile operating system?	2	CO5	K4
v	Differentiate between Distributed Operating System and Network Operating System.	2	CO3	K2
vi	What do you mean by fail-safe system and fail-stop?	2	CO1	K1
vii	What do you mean by Byzantine failure and fault tolerance?	2	CO2	K2
viii	Define k-fault tolerance.	2	CO2	K1
ix	What do you mean by transparency of RPC?	2	CO4	K2
x	What do you mean by Inter-process Communication overhead is reduce in Computing Cluster?	2	CO3	K3

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	What do you mean by RTOS? Explain some benefits of using RTOS.	5	CO3	K4
3	State and explain various issues in load distributing algorithms.	5	CO2	K4
4	What do you mean by periodic, aperiodic and sporadic real time system?	5	CO4	K2
5	Draw and explain the working of MOSIX Cluster.	5	CO3	K6
6	What do you mean by micro kernel and monolithic kernel?	5	CO2	K2
7	Mention the advantages of Distributed system.	5	CO2	K1

Section C (Answer any THREE out of FIVE) – 30 Marks-
(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
8	Discuss the design issue of Remote Procedure Call (RPC) with a neat diagram.	10	CO3	K4
9	Differentiate between tightly coupled multiprocessor system with its advantages and disadvantages.	10	CO1	K2
10	What do you mean by cluster computing with reference to MOSIX OS .Mention the features of MOSIX OS?	10	CO4	K2
11	Explain the feature of Mobile Operating System with reference to Android, IOT, and Windows mobile OS.	10	CO4	K4
12	Explain the concept of mutual exclusion in advance Operating system briefly.	10	CO5	K1

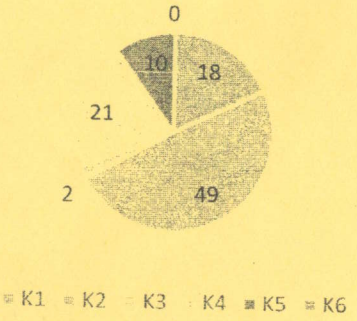
26/04/24 M-BC

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

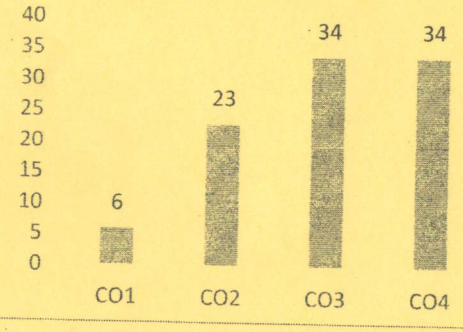
Course Outcomes	CO1	understand cyber-attack, types of cybercrimes, cyber laws
	CO2	Conduct a cyber -security risk assessment
	CO3	Measure the performance and troubleshoot cyber security systems.
	CO4	Use cyber security, information assurance, and cyber/computer forensics software/tools.

GRAPHICAL REPRESENTATION

BLOOM'S LEVEL WISE MARKS DISTRIBUTION



COURSE OUTCOME WISE MARKS DISTRIBUTION



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END SEM EXAMINATION
School of Engineering & IT

Branch	Computer Science & Engineering	Program	B.Tech
Subject Name	Cyber Security	Semester	VIII
		Year	April 2024

Time: 3 Hour
Max. Marks : 70

- Start writing from 2nd page onwards; **don't Write on the 1st Page Backside**
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Knowledge Level (KL)			
	K1 : Remembering	**K3** : Applying	**K5** : Evaluating
	K2 : Understanding	**K4** : Analysing	**K6** : Creating

Section A (Each question Carry 02 Marks from Q1-i to Q1-x) – 20 Marks

Q. N 1	QUESTIONS	Marks	COs	KL
i	What are cookies? Why do we need it?	2	CO1	K1
ii	Mention any two challenges to Indian Laws related to Cybercrimes.	2	CO2	K2
iii	Analyse the difference between the computer forensics and cyber forensics.	2	CO3	K4
iv	Discuss the motives behind the cybercrimes.	2	CO1	K1
v	Draw some comparisons between active and passive attacks.	2	CO1	K2
vi	Explain the term 'vishing'.	2	CO2	K1
vii	Name different types of identity theft.	2	CO2	K1
viii	Given the concept of malware, design a plan to detect and mitigate two common types of malware, considering their methods of propagation and payload delivery.	2	CO3	K3
ix	Analyze the importance of encryption in data security	2	CO4	K4
x	Mention the two purposes of either W3af or Nikto.	2	CO4	K4

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Describe the Cyber forensics and Digital Evidence? What are the precautions to be taken when collecting electronic evidence?	5	CO3	K2
3	Write about Back Door attack?	5	CO2	K1
4	Explain with neat diagram the working of Network Address Translation(NAT)	5	CO3	K2
5	Explain various tools related to Web Security.	5	CO4	K4
6	Differentiate between DoS and DDoS attack	5	CO2	K2
7	Elaborate on the features of Indian IT Act 2000.	5	CO4	K1

Section C (Answer any THREE out of FIVE) – 30 Marks-
(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
8	What is Vulnerability scanning? How does it work? Give a real world example.	10	CO2	K2
9	Does the use of VPN act as a boon or bane? Discuss its potential strengths and weaknesses.	10	CO4	K4
10	Explain with neat diagrams the working of three way handshaking protocol.	10	CO3	K2
11	Explain the process of implementing end-to-end encryption for email communication within an organization.	10	CO3	K5
12	Write detailed notes on any three: Fpipe, WinRelay, Network Reconnaissance, Indian IT Act 2000.	10	CO4	K2